

### REMARKS

Claims **1-16, 18, 20-22**, and **24-27** were examined. Claims **1** and **10** has been amended. Applicant thanks the Examiner for the continued allowability of claims 20-22 and 24. No new matter has been presented.

### RESPONSE TO REJECTIONS

#### CLAIM 1 IS ALLOWABLE OVER FURENDAL

Claims 1-9 and 25 were rejected under 35 USC 102(b) as being anticipated by US Patent No. 4,293,596 to Furendal et al. (hereinafter "Furendal"). Applicant respectfully overcomes the rejection.

Amended claim **1** recites two specific features: a) that insolubility of the outermost portion results only from exposure of the organic film to the vapor of the solvent and b) without exposure to the vapor of the solvent, the organic film is dissolvable by the solvent. By way of nonlimiting example, support for these features are found on page 3 lines 29-32 and page 4, lines 1 to 15. This text clearly describes the processes whereby insolubility is created only by exposure to a solvent vapor. Applicant submits that it should be clear to anyone of skill in the art that there should be no ambiguity when reading the cited text and the essence of this embodiment of the invention. The text at page 4, lines 14-15 shows that film without the vapor treatment dissolves in the solvent. These amendments highlight that it is counterintuitive to expect that exposing an organic material to a vapor of a solvent would render that organic material insoluble in that solvent (page 4, lines 7-8).

As noted in Furendal at Col. 1, line 1, the invention of Furendal "relates to a new surface coating or painting method which gives coherent paint and/or protective coatings...." The method of Furendal is described starting at Col. 11, line 20, wherein the composition to be applied to a surface by various described techniques. A solvent is applied in gaseous or liquid form as described Col. 12, lines 4-9.

The purpose of the Furendal solvent vapor exposure, however, is not to harden the film or create insolubility, but to create a continuous film. Furendal's states "that the solvent can dissolve or swell the particles at the exposure temperature used so that the particles can flow together and form a continuous surface coating". See col. 11 lines 63-65. Applicant submits that

this makes sense for a reference from a paint based technology area, as this allows the particles to flow together and form a continuous surface coating as described in Furendal. If this vapor exposure had given insolubility and hardened the film, it would not allow the desired flow and continuous coverage desired by Furendal. This flowing together of particles into a continuous coating is a fundamental part of Furendal, due its methods coating two different dispersions and drying them to avoid premature cross linking.

Furendal insolubility is not a direct result of solvent exposure but instead, a result of chemical cross-linking. More specifically, Furendal states that it is the cross-linking that provides the solvent resistance (see col. 8 lines 13-14, 35-36) and that cross-linking must not take place until after the treatment with solvent. See col. 8, lines 38-39. The main thrust of Furendal is that they have come with a way to avoid premature cross-linking by making two dispersions. A mixture of these particle dispersions can thus be applied to a surface and dried, and be exposed to solvent to form a coherent coating when the reactive groups come into contact with each other. See Col. 8, lines 42-58. Through heat activation, cross-linking can be obtained, whereby resistance to solvent and other effects according to the foregoing are achieved.

So, the method of Furendal requires some step to combine the two dried dispersions and that is where they vapor exposure step comes into play. It combines the particles and allow them to flow. Applicant submits that it would appear to be detrimental to Furendal to have the vapor exposure create insolubility as that may impede the formation of the coating.

Given the above statements in Furendal, the Applicant respectfully requests that the Office review Furendal with the understanding that nothing related to insolubility occurs during Furendal's solvent vaport exposure. Furendal clearly contradicts any notion that solvent vapor exposure creates insolubility since the purpose of vapor exposure is to create a coherent coating. For the Office to characterize Furendal otherwise is to run counter to Furendal's a) desire that the solvent exposure allows the particles to flow and provide a continuous coating and b) method to avoid premature cross-linking by creating two separate dispersions.

With regards to heat, the Office has cited to Furendal where at the step where film formation is aided with or without heat while using the solvent in Furendal column 11, lines 60-65. Applicant notes that this textual citation is not relevant to insolubility as this step occurs during the vapor exposure step and unrelated to insolubility step. At that moment of vapor exposure, there is no imparting of insolubility. Thus whether its heated or not...it does not relate

to what happens during cross-linking. The only teaching Applicant sees is cross-linking during heating. Furendal specifically states that “through heat activation, cross-linking can be obtained, whereby resistance to solvent and other effects according to the foregoing are achieved.” Col. 8, lines 54-57. Additionally, Example 16 states that, “The coating did not swell at all, which shows that cross-linking took place between the oxirane groups during the heat treatment after the solvent treatment.” See col. 27, lines 38-41. In addition, example 29 states that, “The coating swelled insignificantly, which shows that cross-linking took place between the oxirane and the carboxylic acid groups during the heat treatment after the solvent treatment.” See col. 33, lines, 27-30.

Based on the aforementioned, Claim 1 and its dependent claims are believed to be in condition for allowance.

#### **CLAIM 10 IS ALLOWABLE OVER FURENDAL**

Claims 10-16, 18, and 26-27 were rejected under 35 USC 103(a) as being obvious in view of Furendal. Applicant respectfully overcomes the rejection in part and traverses the rejection in part.

Amended claim 10 recites that without exposure to the vapor of the second solvent, the organic film is dissolvable by the first solvent (wherein the first solvent is the same as the second solvent). Support may be found on page 3 lines 29-32 and page 4, lines 1 to 15 of the present application. For the reasons set forth above with respect to the rejection of claim 1, the Applicant submits that Furendal fails to show or suggest all elements as set forth in claim 10.

Furthermore, per MPEP 2144.03, Applicant respectfully requests that Office provide evidentiary support for the official notice taken by the Office at page 6, lines 1-5 in the present rejection. Per the MPEP, official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. Applicants fail to see the unquestionable basis for the Office’s statement at page 6, lines 1-5 that it would be obvious to use the same solvent to dissolve as well as anneal the polymer. This directly contradicts text in the present application regarding basic intuition on chemical reactions. As described in the present application, it is counterintuitive to expect that exposing an organic

material to a vapor of a solvent would render that organic material insoluble in that solvent (see page 4, lines 7-8). Applicant notes that notions of inventors herein are based on their experiences as persons of skill in the art, with inventor Matthew Robinson having a doctorate in chemistry from the University of California Santa Barbara and Brent Bollman with an engineering degree from Princeton University. Per MPEP 2144.03, Applicant respectfully requests that the Office provide evidentiary support the official notice taken in relation to the present rejection.

**Per MPEP 2143.01, the proposed modification cannot render the prior art unsatisfactory for its intended purpose.**

The Applicant notes that, according to MPEP 2143.01(V) “[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)”.

As discussed above with respect to claim **1**, the Applicant submits that Furendal explicitly teaches against premature cross-linking. (Col. 8, lines 34-39). The Applicant further notes that Furendal teaches that *a condition for the invention* is that the polymer film will be dissolved. See col. 8, lines 35-37. The Applicant submits that this is a general teaching that applies to all of the embodiments of Furendal. The Office’s proposed modification of Furendal to allow the vapor exposure to create insolubility would defeat the purpose *of the invention* in Furendal as this vapor exposure step is required allow the particles to flow and combine into a continuous film. The Office’s modification would create premature cross-linking (i.e. insolubility) which Furendal specifically teaches against.

As such, for at least the above reasons that a prima facie case of obviousness is not present with respect to claim **10**. In addition, claims **11-16** and **18** depend either directly or indirectly from claim **10** and recite additional features therfor. As such and for the same reasons set forth above, the Applicant submits that these dependent claims define an invention suitable for patent protection. In addition, it is believed that the arguments set forth above apply *a fortiori* to claims **25** and **27** since Furendal teaches the use of heat treatment to cross-link the film.

**CONCLUSION:**

For the reasons set forth above, the Applicant submits that all claims are allowable over the cited art and define an invention suitable for patent protection. The Applicant therefore respectfully requests that the Examiner enter the amendment, reconsider the application, and issue a Notice of Allowance in the next Office Action.

Respectfully submitted,

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